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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/532,473	04/22/2005	Kunihiro Oda	OGOSH31USA	1626

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HOWSON AND HOWSON
SUITE 210
501 OFFICE CENTER DRIVE
FT WASHINGTON, PA 19034

EXAMINER

ROE, JESSEE RANDALL

ART UNIT	PAPER NUMBER
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1793

MAIL DATE	DELIVERY MODE
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01/10/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.		Applicant(s)	
	10/532,473		ODA, KUNIHIRO	
	Examiner		Art Unit	
	Jessee Roe		1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2 and 11-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2 and 11-29 is/are rejected.
- 7) ☒ Claim(s) 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/ are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8 September 2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of the Claims

Claims 2 and 11-29 are pending wherein claims 1 and 3-10 are canceled.

Claim Objections

Claim 15 is objected to because of the following informalities: "macro structure" should be "macrostructure". Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 24-28 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Turner (US 6,331,233).

In regards to claim 24, Turner ('233) discloses a tantalum sputtering target (col. 2, lines 33-63).

With respect to the processing limitations of claim 24-28, the Examiner notes that the claim is directed to a product. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. It appears that Turner ('233) discloses a product which reasonably appears to be either identical to or only slightly different than the tantalum sputtering target in the instant product-by-process claim 24. Therefore, a rejection based alternatively on either section 102 or section 103 is appropriate. MPEP 2113.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 11-23 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Turner (US 6,331,233).

In regards to claims 2, 12, 16-18 and 20-21, Turner ('233) discloses a method of manufacturing tantalum sputtering targets wherein vacuum-melted tantalum ingots would be forged, rolled, and annealed at a temperature in the range of 1500°F to 2800°F (1089K to 1811K) (col. 3, line 49 - col. 4, line 26). Turner ('233) further discloses annealing to in an inert atmosphere at a temperature in the range of 1500°F to 2800°F (1089K to 1811K) to recrystallize the microstructure; utilizing at least three deformation

steps and no less than three inert-atmosphere anneal steps from ingot to final target plate thickness to achieve a mean grain size of less than 100 microns (col. 3, line 49 - col. 4, line 26).

In regards to claim 11, Turner ('233) discloses annealing to in an inert atmosphere at a temperature in the range of 1500°F to 2800°F (1089K to 1811K) to recrystallize the microstructure.

The Examiner notes that the mean (average) grain size disclosed by Turner ('233) overlaps the mean (average) grain size of the instant invention, which is A prima facie case of obviousness. MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the claimed mean (average) grain size from the mean (average) grain size disclosed by Turner ('233) because Turner ('233) discloses the same utility throughout the disclosed range.

In regards to claims 13-14, Turner ('233) discloses that the deformation can be forging, rolling or extruding (col. 3, lines 49-55). Turner ('233) further discloses utilizing at least three deformation steps and no less than three inert-atmosphere anneal steps from ingot to final target plate thickness to achieve a mean grain size of less than 100 microns (col. 3, line 49 - col. 4, line 26).

In regards to claims 15, 19 and 22-23, Turner ('233) discloses a process that would be the same as or similar to that of the instant invention. Therefore, a target that has no uneven macrostructure in the form of streaks or aggregates on the surface or inside the target would be expected. MPEP 2112.01 I.

In regards to claim 29, Turner ('233) discloses that the final inert-gas atmosphere and temperature to recrystallize would be result-effective in the grain size obtained (col. 3, line 49 – col. 4, line 26). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the number of deformation steps and type thereof in addition to the inert-gas annealing atmospheres and quantity thereof to achieve the desired grain size. MPEP 2144.05 II. Further, Turner ('233) discloses tantalum targets with grain sizes less than 50 μm and less than 100 μm , which overlaps the grain size of the instant invention (Example I, Table I, and col. 4, lines 18-26). MPEP 2144.05 I.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessee Roe whose telephone number is (571) 272-5938. The examiner can normally be reached on Monday-Friday 7:30 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Roy V. King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Application/Control Number:
10/532,473
Art Unit: 1793

Page 6

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JR


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